

Appl. No. 09/867,793
Amdt. dated 5/2/2005
Reply to the Office Action of 2/02/2005

Amendments to the Specification:

Please replace the paragraph that begins on page 1, line 12 with the following paragraph:

The present patent application is related to co-pending and commonly-owned U.S. Patent Application No. ~~XX/XXX,XXX, Attorney Docket No. ARC920010018US1~~ 09/928,347, entitled "Collaborative Content Programming", filed on even date with the present patent application, the entire teachings of which being hereby incorporated by reference, and further is related to co-pending and commonly-owned U.S. Patent Application No. 09/163,498, entitled "An Extensible Thin Server for Computer Networks", filed on 9/30/98, the entire teachings of which are hereby incorporated by reference.

Please replace the paragraph that begins on page 2, line 12 with the following paragraph:

Contemporary technology has brought forth ~~such wonders as~~ inexpensive and pervasive PCs, and networks of computers connected together by networks such as the Internet. It is now possible to compress audio files using MP-3 (MPEG-1 Layer 3) compression and store them on a personal computer for deferred listening. In fact, it is possible to compose a ~~[[play-list]]~~ play list of personal favorites from different artists, assemble the audio files into a folder, and then send this to someone ~~special~~.

Please replace the paragraph that begins on page 3, line 10 with the following paragraph:

The popularity of audio file sharing groups is noted. They represent two issues. ~~The First, the~~ clients are typically individuals at different locations. ~~In addition where~~ Second, where there is shared listening, the play list is really in the control of a given PC operator. In this ~~situation the situation, the group of listeners of the group~~ are not able to make individual choices or votes for the play list. ~~Accordingly there~~ Accordingly, there exists a need for the ability to vote as a group in a shared listening environment.

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Please replace the paragraph that begins on page 3, line 17 with the following paragraph:

Another problem is the ~~issues~~ issue of ownership. ~~Specifically song~~ Specifically, song copyrights allow for the listening pleasure of individuals who bought a given song. This listening may be individually or in a shared acoustical environment. The ownership does not allow for wholesale copying or distribution of audio files, thus depriving the copyrighted song owners their revenue stream. ~~Accordingly there~~ Accordingly, there exists a need for enforcing the copyrights of the audio file owners, while enabling a shared listening environment.

Please delete the heading **BACKGROUND OF THE INVENTION** that appears on page 3, line 25.

Please replace the paragraph that begins on page 9, line 3 with the following paragraph:

Turning now to FIG. 4, block diagram 400 illustrates an exemplary network topology for use according to a preferred embodiment of the present invention. A computer system with an audio platform 404 is communicatively coupled via a network 402 to a plurality of networked computing ~~client~~ devices 412, all of which ~~are~~ have audio listeners in acoustical proximity. The network 402 may be a LAN (Local Area Network) that is typically installed in a business. Alternatively, the network 402 may comprise a company VPN (Virtual Private Network), an ~~Intranet~~ intranet, or the Internet, or any combination of such networks. The computer system with audio platform 404 contains the virtual Jukebox application 406 and possible other applications 408. The audio platform of the computer system 404 controls the speakers for all 410. The plurality of networked computing devices 412 that are connected to the network 402 may be a typical PC with a web browser and stored song files 414, a note book with web browser and stored songs 416, a PC with a voice controlled interface 418, or a PDA (Personal Digital Assistant) with stored songs 420. The networked computing devices 412 are examples and as such should not limit this invention to only these that are shown. Note that although these networked computing devices 412 are illustrated with stored songs, it is not necessary for each of these networked computing devices 412 to have stored songs or for all networked computing devices with stored songs to provide a user interface. In addition, it is not necessary for all of the networked computing devices 412 to be connected or to stay connected for the present invention to operate.

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Please replace the paragraph that begins on page 10, line 12 with the following paragraph:

Another alternative is prepayment of rights to play a song for a fixed number of times. In this case, the copy protection ~~software~~⁵²⁴ software 524 of FIG. 5 (discussed below) keeps track of how many times the song is played, and rejects requests after that number is expired, unless the rights are renewed. The Jukebox may be configured to automatically purchase rights on demand.

Please replace the paragraph that begins on page 10, line 27 with the following paragraph:

Turning now to FIG. 5, virtual Jukebox device 500 includes hardware and software components for implementing the virtual Jukebox functions according to a preferred embodiment of the present invention. The hardware and software components include a processor/controller CPU 502, a memory 504, a network interface 554, an audio playback platform and interface 544 that according to a preferred embodiment of the present invention ~~comprise~~ comprises a sound chip and/or a sound card. This audio platform controls speakers, which may be as simple as one local speaker, a set of speakers for surround sound or a distributed set of speakers in a large environment such as a warehouse. In addition, there is a display interface 542 for driving a display (not shown) that is viewable by a user of the virtual Jukebox device 500, and a user input interface 546. The user-input interface 546 may include a keyboard, a mouse, and/or other device for reviewing user input from a user of the virtual Jukebox device 500. Limited non-volatile storage is also utilized, and can take several forms including hard disks, Flash memory or battery backed up ~~Dram~~ DRAM 550. In order to maintain the OS 506 (operating system) and at least the Jukebox SW (software) application 508 and the vote history lists (explained below) non-volatile memory is preferably utilized. This will allow for Jukebox operation using OS and the Jukebox SW application after power outages and for the contents of the vote history lists to be available.

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Please replace the paragraph that begins on page 11, line 25 with the following paragraph:

Virtual Jukebox functions are provided by a combination of software components operating with the hardware platform and components. The basic connectivity framework, including an embedded HTTP server and a subscription mechanism for services, is preferably provided by a CyberHub architecture as taught, for example, in the related co-pending U.S. ~~patent~~ Patent Application No. 09/163,498, entitled "An Extensible Thin Server for Computer Networks", filed on 9/30/98, which is commonly owned by the assignee of the present patent application and the entire teachings of which are hereby incorporated by reference. This framework supports ~~[[plug-able]]~~ pluggable software modules (called services) that perform specific functions, and can use other services installed on the same computer system. In addition, the system supports updating services remotely, so that when a new version of a software module becomes available, it can be installed from a remote location via a network communication.

Please replace the paragraph that begins on page 12, line 16 with the following paragraph:

Within the Jukebox application 508, the front-end manager 528 interfaces with any direct interaction ~~with~~ between a user and the Jukebox, controlling certain global functions. The voting manager 530, according to the present example, receives votes from networked devices 412 and then aggregates the votes and performs such checks as maintaining quotas, and performing the summation, which is provided to the vote database 532. The queue database 518 contains queue items arranged in a FIFO order of the requested audio files and is provided to the queue manager 516, which can adjust the order of the audio files listed. This queue manager 516 provides the list of audio files that will be stored in the local cache. The cache manager 520 and its resultant cache database 522 maintains coherency with the queue database 518 and, in this example, pre-fetches the audio files so that no rendering of an audio file will be started unless it is local to the Jukebox. Optionally, as the audio files are requested by the cache, a check is performed by the copy protection software 524 to assure the security of the audio files to be rendered. The Jukebox controls are provided by the audio player manager 512. The Jukebox controls ~~are such as~~ include the volume, left/right balance, treble, and similar functions of the speakers (not shown).

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Please replace the paragraph that begins on page 15, line 14 with the following paragraph:

Turning now to FIG. 6, flow diagram 600 shows simple requesting of a song at a networked device 412 such as shown in FIG. 4, according to a preferred embodiment of the present invention. The user decides to request a particular song and enters the flow at step 602, by entering the URL (Uniform Resource Locator) of the song at step 604. This URL is typically on the local network, but it may in fact be anyplace specific. That is, the URL may be a tag to a location on a particular PC's hard drive on the LAN or it may be a particular location ~~[[out]]~~ on the Internet. The networked device 412 receives user input and then sends the request to the virtual Jukebox device 500 at step 606. This flow is then exited at 608. Alternatively, the user may enter the request by selecting one that is listed as available on the network.

Please replace the paragraph that begins on page 17, line 11 with the following paragraph:

The vote database 532 is used by the autoplay manager ~~514 to~~ 514 to play the songs in the absence of requests. ~~In effect the effect, the~~ Jukebox "learns" the preferences of the users. (This will be explained below.) The given voting algorithm only represents one possible scheme to determine the popularity of a song and the fact that enough clients want the playback of the song to be stopped. Other voting algorithms may be used as may be appreciated by those of ordinary skill in the art in view of the present discussion.

Please replace the paragraph that begins on page 17, line 24 with the following paragraph:

Turning now to FIG. 8, an exemplary operational sequence 800 illustrates an autoplay manager 514 according to a preferred embodiment of the present invention. An autoplay manager 514 operational sequence is entered, at step 802, when the last requested song on the queue database 518 is completed at step 804. The autoplay manager 514 determines the next song to play using the vote database 532 employing a randomly selected list ~~806. (explained below)~~ 806 (explained below). This selection is placed in the queue database 518 and then is loaded into the cache database 522 and rendered at step 808. After the song is rendered, a check is performed to see if the queue database 518 has a song request in it at step 810. If there is a requested song at step 810, the auto play operational sequence exits at step 816. ~~While~~ If no song has been requested at step 810 the queue database 518 is loaded with another randomly selected song from a randomly selected list at step 806.

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Please replace the paragraph that begins on page 18, line 26 with the following paragraph:

Turning now to FIG. 9, illustrated is a description 900 of the voting database lists and how these lists are used to select audio files automatically. FIG 9a shows three exemplary lists, ~~which lists that~~ represent audio files that have been voted for. Although three lists are being shown, more lists may be used in accordance with preferred embodiments of the present invention. The central list ~~902, represents~~ 902 represents a list of audio files that have been requested. The height of this bar illustrates the audio files receiving a normal or average number of votes. The higher bar 904 is intended to illustrate audio files receiving higher number of votes. Audio files have been moved to this list from the requested audio files list 902 because these audio files have received favorable votes for them beyond a certain threshold such as during the time that they were played. The threshold may be programmable and set to different values, while it is taken to be 50% in the present example. The lower bar 906 is intended to illustrate audio files in this example receiving unfavorable votes. Audio files have been moved to this list 906 from the requested audio files list 902 because these audio files have received unfavorable votes for them beyond a certain threshold during the time that they were played.

Please replace the paragraph that begins on page 22, line 8 with the following paragraph:

Each computer system may include, inter alia, one or more computers and at least a computer readable medium allowing a computer to read data, instructions, messages or message packets, and other computer readable information from the computer readable medium. The computer readable medium may include non-volatile memory, such as ROM, Flash memory, Disk drive memory, CD-ROM, and other permanent storage. Additionally, a computer medium may include, for example, volatile storage such as RAM, buffers, cache memory, and network circuits. Furthermore, the computer readable medium may comprise computer readable information in a transitory state medium such as a network link and/or a network interface, including a wired network or a wireless ~~network, that allow~~ network that allows a computer to read such computer readable information.